

# PROJECT 10073 RECORD CARD

1. DATE 30 May 52		2. LOCATION North Pacific (Hawaii Islands)		12. CONCLUSIONS <input type="checkbox"/> Was Balloon <input type="checkbox"/> Probably Balloon <input type="checkbox"/> Possibly Balloon  <input type="checkbox"/> Was Aircraft <input type="checkbox"/> Probably Aircraft <input type="checkbox"/> Possibly Aircraft  <input type="checkbox"/> Was Astronomical <input type="checkbox"/> Probably Astronomical <input type="checkbox"/> Possibly Astronomical  <input type="checkbox"/> Other <input type="checkbox"/> Insufficient Data for Evaluation <input type="checkbox"/> Unknown	
3. DATE-TIME GROUP Local _____ GMT 30/1045Z		4. TYPE OF OBSERVATION <input type="checkbox"/> Ground-Visual <input checked="" type="checkbox"/> Ground-Radar <input type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar			
5. PHOTOS <input type="checkbox"/> Yes <input type="checkbox"/> No		6. SOURCE Military			
7. LENGTH OF OBSERVATION 6 sec		8. NUMBER OF OBJECTS 1		9. COURSE WNW	
10. BRIEF SUMMARY OF SIGHTING Exceptionally bright meteor, brightened considerably as it fell, leaving red trail & finally disintegrating into shower of red pieces.				11. COMMENTS Meteor, as described by witnesses.	

1. PANAMAT #0987 20,000'  
 2. PANAM. FLT #0942  
 3. Slick Airways FLT #719/11  
 4. EMIRESS FLT #323-11 11,000'  
 5. JETTEL AIRLINES FLT #21 12,000'

11 July 59

1-024

UFC 51, 51, 51, 51

POSITION PLOT OF THE REPORTING AIRCRAFT

Vectors indicate the direction of the object as reported by each crew.

FOR

FOR

East at high speed

Handwritten signature or initials





## ASTRONOMY

# Three Planets Now Visible

Venus, Mars and Jupiter are visible on May evenings as the sky darkens. Saturn becomes visible as midnight approaches.

By JAMES STOKLEY

➤ **THREE PLANETS** are visible to the naked eye on May evenings, as soon as the sky darkens, while a fourth appears before midnight.

The brightest of these is Venus, now so brilliant it can be seen soon after sunset, while dusk is gathering. After that, until it sets about three hours after the sun, Venus dominates the western sky, situated in the constellation of Gemini, the twins.

Mars is also in Gemini, but is about 1/130th as bright as Venus, due to its great distance at present, about 180,000,000 miles. This makes it appear similar to a star of the second magnitude, while Venus is many times brighter than first: minus 3.6 on the astronomical scale of brilliance.

Look to the southeast for the third May planet. This is Jupiter, currently on the border between Libra, the scales, and Scorpius, the scorpion. Although less than a quarter as bright as Venus, its magnitude is minus two, far exceeding any nearby star or planet. Thus it dominates the southeastern sky, much as Venus does in the west.

Saturn is May's fourth planet; it rises about 11:15, your own kind of standard time (add one hour for daylight saving time) at the first of May and about 9:15 at the end of the month. It is in Sagittarius, the archer, and is equal to a bright first magnitude star in prominence.

All these planets (except Saturn), as well as the stars of the May evening, are shown on the accompanying maps. These depict the skies at about 10:00 p.m. (standard time) at the first of May and an hour earlier at mid-month. They would also show them as they appear at 8:00 p.m. at the end of May, but at that time of year the sky does not become dark, over most of the United States, until after 9:00 p.m.

## Vega Is Brightest

The brightest star is Vega, in Lyra, the lyre, in the northeast. The next is Arcturus, high in the southeast in Bootes, the bear-driver. A good way to locate this star is to look first in the north at the familiar Great Dipper, which is part of Ursa Major, the great bear. In the bowl of the dipper are the pointers; if followed downwards they bring you to Polaris, the pole star, which stands directly over the North Pole. But if you follow the curve of the handle of the Big Dipper around to the south, you come to Arcturus. Continuing farther, it brings you to another first-magnitude star: Spica, in Virgo, the virgin.

To the right of Virgo, high in the south-

west, is Leo, the lion. This group contains a smaller figure known as the sickle. (The blade of the sickle forms the head of the lion.) In the handle of this implement is the star called Regulus.

In addition to Mars and Venus, the constellation of Gemini contains Pollux, another star of the first magnitude. Castor, which represents the other twin, is of the second magnitude. Looking to the right of this group, you will find Auriga, the charioteer, with the bright star Capella.

The maps also show two other first-magnitude stars, but each is so low in the sky that it appears many times fainter. One is Antares, in Scorpius, a little below Jupiter. The other is Deneb, in Cygnus, the swan, near the northeastern horizon, below Lyra. In a few months both will be prominent in the evening.

On May 18 Jupiter will be in opposition. This means that it is directly opposite the sun, so it rises at sunset and sets at sunrise. Also, since we are then in the same direction from the sun as Jupiter, it is closest to the earth. Its distance will be 405,800,000 miles.

This is a good time to observe Jupiter.

It makes a striking sight, even through a small telescope. It has 12 moons, four of which are as large as our moon, or larger. Two, in fact, are larger than the planet Mercury. These four can be seen with even rather small telescopes, and they are fascinating to watch, night after night, as they swing from one side of Jupiter to the other. Occasionally they even disappear from view, as they hide behind Jupiter, or suffer eclipse when they pass through its shadow.

## Dimensions of Jupiter

Through a telescope that magnifies only 40 diameters, Jupiter would look about as big as the moon does to the naked eye. Its shape is elliptical, rather than circular. Its diameter at the equator is 88,770 miles, but that from pole to pole is about six percent less, or 83,010 miles.

This flattening at the poles is a result of rapid rotation, for Jupiter turns on its axis in only 9 hours 55 minutes. Because of its enormous size, the speed of rotation at the equator is about 28,000 miles per hour. This results in centrifugal force so great that the planet's equator is thrown to a distance of nearly 3,000 miles farther from the center than are the poles, where there is no centrifugal force.

The equatorial bulge of the earth is only a little more than 13 miles. This is a result



• • • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



of the earth's much smaller size and slower rotational speed, about 1,035 miles per hour.

If you look at Jupiter through a telescope, you will be impressed with the amount of detail that is visible. It is crossed by light and dark bands, parallel to the equator, which display a variety of color: orange, red, brown and even green. These features may change rapidly, so it is apparent that they are not part of a solid surface. Instead, what we see are tops of clouds which perpetually cover Jupiter.

Venus, too, is continually enshrouded in clouds, but they are merely a thin layer, like the clouds of earth.

Those of Jupiter make up much of that planet's volume. If you could land on what appears to be its equator, and then descend, you would go some 8,000 miles before you reached the bottom of the atmosphere, according to the widely accepted theories of Dr. Rupert Wildt of Yale University.

### Jupiter's "Slushy" Region

There you would come to a layer of ice, but probably there would be no sharp boundary; rather a slushy region which became more and more solid as you penetrated toward the center. Some 17,300 miles deeper, at a total depth of more than 28,000 miles, you would reach the bottom of the ice, and the top of the solid core, more than 28,000 miles in diameter, and probably of rock and metal. This accounts for only about eight percent of Jupiter's volume, while the core and the frozen ocean around it are only 55%; the rest is the atmosphere.

This consists of methane and ammonia, which have been detected by analysis of Jupiter's light. Probably a considerable amount of hydrogen is also present, although this cannot be so easily detected. At the "surface" of Jupiter, the top of the cloud layer, the temperature is about minus 150 degrees Fahrenheit. In many respects it would fail to qualify as a place where space ships could land. However, the moons of Jupiter might be more suitable for some future expedition. From one of these much could be learned about the giant planet, and many of its current puzzles could be solved.

### Celestial Time Table for May

May	EST	
5	early a.m.	Meteors visible, radiating from constellation of Aquarius.
7	3:11 p.m.	New moon.
	11:00 p.m.	Moon farthest; distance 252,600 miles.
11	9:11 a.m.	Moon passes Venus.
12	9:49 p.m.	Moon passes Mars.
15	3:09 p.m.	Moon in first quarter.
18	3:00 p.m.	Jupiter opposite sun; distance 405,800,000 miles.
20	midnight	Moon nearest; distance 221,900 miles.
22	12:43 a.m.	Moon passes Jupiter.
	7:56 a.m.	Full moon.
24	4:19 p.m.	Moon passes Saturn.
29	3:13 a.m.	Moon in last quarter.

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, April 25, 1959



SOUTHERN OREGON COLLEGE

ASHLAND, OREGON 97520

50 NAME 2 47

NOV 29 1965

Nov. 29, 1965

U.S.A.F.  
Wright Patterson Field  
Attention Office re: UFO's  
Dayton, Ohio.

Gentlemen:

I am writing you this letter very belatedly to report two strange objects that my wife and I saw in the summer of 1959. I have finally decided to write because I feel embarrassed at not reporting these incidents before. This letter is probably unimportant, but in the light of the many times I have ridiculed the possibilities of unidentified flying vehicles, I feel that I should at least report my experiences.

I have been a tracker for 16 years and in 1959 I was driving my family to Trout Lake Washington in the Gifford Pinchot Forest. We were going there to report to the Forest Service for our summer lookout position. (We worked five years in this capacity.) We had not yet arrived at Trout Lake being about two miles away when we saw, ahead of us, a bright - but soft, luminous shape over Flattop ridge. We were very startled and we stopped the car and ~~observed~~ observed this shape for about 5-8 minutes. It was motionless and clearly suspended above the ridge top - I would say 100' to 150'. It seemed to be an "electrical blue" - and not as bright as a neon blue. We left this spot to get some friends to document this object but we found that upon arriving at their home some 4-5 miles distant, the ridge could not be seen from that point. By the time we all returned to the original position the shape was gone. This object was so separate and distinct to any other experience that I could never come to the conclusion that it could be a natural or known form.

Later in the same summer, my wife and I looked out of the window (about 11 pm.) and saw a ~~at~~ white shape with pulsating red lights appear in the distant



horizon. It very rapidly became a larger shape and we were amazed at the apparent speed this indicated. It made a small arc, from the Lemai Rock area and came directly towards and over our lookout tower. I was very frightened and did not go outside the tower for some minutes. There was absolutely no sound which was highly unusual in such a remote area. We often saw many U.S. G. F. planes and we know what the jets sound like.

The exact dates of these occurrences probably could be obtained from the ~~US~~ US 75 diaries that all lookouts keep. I must venture this opinion, we have been rather familiar with common visual phenomenon and I can assure you - these were something distinct and unusual in our experience. I am very sorry that fear of ridicule kept me from reporting them sooner.

Later that year I talked with other lookouts and apparently several other objects had been seen by more than one lookout at a time, moving at tremendous speeds in the Mt. Rainier area.

Sincerely yours,

Dr. ~~James H. [redacted]~~

~~[redacted]~~

Southern Oregon College.

DR. [REDACTED]  
SOUTHERN OREGON COLLEGE  
1250 SISKIYOU BOULEVARD  
ASHLAND, OREGON 97520

United States Air Force  
Wright-Patterson Field  
Attention Office of:  
Dayton, Ohio





No Case (Information Only)

6 May 1959  
Galt, Ontario, Canada

1959 showed at least 11 UFO photographs. On May 6 at Galt, Ontario, Canada reporter Phil Potentier photographed a white ellipsoid UFO near an old Post Office tower, as it moved over the city for over an hour.



TRES LOMAS-ARGENTINE: SOURCE: SPANISH NEWS - SIP 488763

On May 20, 1959, at 5:30 p.m., two men who were out hunting saw, near Tres Lomas, in the Province of La Pampa, Pta. the Argentine, a disc-shaped object on the ground, at a distance of 150 metres. They describe the phenomenon as a machine having the appearance of being made of aluminium or of some silvery metal or even of brilliant frosted glass, and from 2 to 25 metres in height. There too a "cupola" with a radius of one metre is mentioned. After the "object" had departed the grass was found to have been flattened.

NO CAST (INFORMATION ONLY)

20 May 59  
Tres Lomas, Argentine



No Case (Information Only)

21 May 1959

Brindisi, Italy-

SMITHSONIAN INSTITUTION  
ASTROPHYSICAL OBSERVATORY

SECTION OF UPPER ATMOSPHERE STUDIES  
IGY OPTICAL SATELLITE TRACKING PROGRAM  
60 GARDEN STREET  
CAMBRIDGE 38, MASSACHUSETTS

Dear Major -

This is so much  
like the great many sightings  
in France that I suspect  
something definite here -  
a meteorological phenomenon?

Point is -  
freak out  
weather  
were there!  
Boyer? Or,  
messy over  
there and  
also.

Huge "Flying Cigar"  
Observed Over Italy

BRINDISI, Italy, May 22  
(Reuters) - A huge "flying  
cigar" emanating a yellow glow  
was seen by many people here  
yesterday, coming from the  
southwest.

"The object seemed to circle  
over the town, and then went  
off at a prodigious speed over  
the sea heading for the Alba-  
nian coast," one eyewitness was  
quoted as saying.

Can we  
what the  
conditions  
An observer  
can we  
air attack  
get more  
this is

a funny pattern!

From now on I am



going to bother you more  
frequently on items that I  
feel should be looked into  
for our own good. Keep our  
powder dry! Never know when  
we'll have to use it!

Cordially,

Allen Hyatt



UNCLASSIFIED

AFR 1135

23 JUN 59

A OVER LINE

TO USS DENALD COUNTY (LST 715)

000000Z

TO COMNAVANTIC WPAFB

INFO CINCPAC

OPERATIONAL MESSAGE

ALPACFLT 34 REFERS. FOLLOWING REPORT SUBMITTED.

000000Z MAY EXCEPTIONALLY BRIGHT METHOD SIGHTED 21-40 NORTH 149-24  
WEST. SIGHTED BEARING 212 DEG TRUE ALTITUDE 43 DEGREES APPROX HALF  
WAY BETWEEN JUPITER AND ALPHARD. VISIBLE ABOUT 6 SECONDS AND  
BRIGHTENED CONSIDERABLY AS IT FELL IN DOWN DIRECTION LEAVING RED  
TRAIL AND FINALLY DISINTEGRATING INTO SHOWER OF RED PIECES AT  
ALTITUDE 33 DEGREES. SKY CLEAR BAROMETER 30.24 SEA CALM WIND FROM  
100 DEGREES TRUE 10 KNOTS. ACCURACY INTO EXCELLENT DUE IMMEDIATE  
RECORDING FOR PREPARATION HYDRO REPORT.

BT

Classification Cont (Ref)

By *Director TDP*

Date *13 MAY 1959*

AFR 2054, Pmc 247a  
3 Jan 68

UNCLASSIFIED



# JUNE 1959 SIGHTINGS

DATE	LOCATION	OBSERVER	EVALUATION
Jun/Jul	New Guinea (see following folder)		Astro (BODIES)
2	SE of Labrador	Military	Astro (METEOR)
3	Genoa, Italy		Astro (METEOR)
3	Hempstead, New York		Aircraft
3	Washington, D. C.		Astro (METEOR)
7	Rossville, Georgia		Aircraft
8	Oakhurst, New Jersey		Aircraft
8	Rockville, Maryland	Military	Aircraft
9	Manassas, Roanoke, Virginia	Military (RADAR)	Aircraft
10	Reno, Nevada	Military	Balloon
11	Ventura, California		Insufficient Data
11	Los Angeles, California	Military	Aircraft
13	Minot, North Dakota	Military	Astro (METEOR)
13	Novinger, Missouri		Insufficient Data
15	Enon, Ohio		Aircraft
16	Camp Lucas, Michigan	Military	Astro (REGULUS)
16	Henderson, Nevada		Aircraft
16	Meridian, Mississippi	Military	Aircraft
18	Waikiki, Honolulu, Hawaii	(PHOTO) missing	Other (SUNGLARE ON LENS)
18	33.05N 134W Pacific	Civilian Airlines	Astro (METEOR)
18	Lyons, Colorado		Astro (METEOR)
18	Enon, Ohio		Aircraft
18	Stephenson, Sault Ste Marie, Michigan		Astro (METEOR)
18	Forest Park, Illinois		Astro (METEOR)
18	Edmonton, Alberta, Canada		UNIDENTIFIED
19	Ecrose, Michigan		Astro (METEOR)
20	6 MI SE of Alexandria, Louisiana		Balloon
21	Chesterland, Ohio	Military	Insufficient Data
21	Macao, China (see folder)	Military (RADAR) F, L, M	Other (SURFACE VESSEL)
24	SE Ohio	Military Air	Insufficient Data
24	Dayton, Ohio		Other (UNRELIABLE REPC)
25	20 MI S of Taegu, Korea	Korean GI	Other (INCONSISTENT DA)
27	Danville, Virginia		Other (HAZE)
30	Patuxent River, Maryland	Military	UNIDENTIFIED

## ADDITIONAL REPORTED SIGHTINGS (NOT CASES)

DATE	LOCATION	SOURCE	EVALUATION
Jun	Universe	Science News Ltr	
10	Booth Lake, Wisconsin	Newsclipping	
12	Mountain States & Canada	Map	
15	Durban, South Africa	Newsclipping	
19	Dayton, Ohio	Newsclipping	
21	Hamilton, Ohio	(Ltr)	Meteor

IN SEPARATE FOLDERS



Sighting

~~Q~~ include six (6) pages of photocopied  
narrative.



Sighting

~~Q~~ includes six (6) pages of photocopied  
narrative.



~~CONFIDENTIAL~~

REPORT OF UFO SIGHTINGS, IN CIVIL AIR,

PART I. SUMMARY

A. The following reports of UFO sightings in the Pacific area (Hawaiian Islands & California) were reported to the AFIS during the period 30 May 1955 to 15 June 1955. There were no significant reports from the area during April or the first 20 days of May.

30 May 1955, 1945Z - Report from the USS Latholm County. Position 21-42N 149-24W. Heading 212 degrees true. Sighted an exceptionally bright meteor which brightened considerably as it fell. Object left a red trail and disintegrated into a shower of red pieces. Duration of sighting six seconds.

30 May 1955, 0100Z - Report from USS Lowell. Position 45-12N 163-50W. Course 125 degrees. Sighted three flaming meteors between 0100Z and 0130Z. Objects fell ahead of the ship from an elevation of approximately 40 degrees.

31 May 1955, 0900Z - Report from LST (1063) USS Flaming County in company of LST (1076) USS St. Clair City and LST (1065) USS Lincoln City. Position 44N 162-50W. Course 115 degrees. Sighted a dimly glowing object 10-25 degrees off bow at 15 degrees elevation. Object was angled toward the ship. Object brightened as if exploding then disappeared. Duration of sighting three seconds.

18 June 1955, 1115Z - Report from Captain H. G. Schenking of United Airlines Flight 41 and Captain Turner of Transamerica Flight 2502. Position approximately 33N 114W. Sighted four globules of fire, round shaped and of an intense bluish-white color. The sky was lighted up by these objects which were moving generally east. Duration of the sighting two seconds. Two surface craft, the USS L. M. Swenson and the USS Pausanias, which were in the area at the time, made negative reports concerning the sighting.

11 July 1955, 1500Z - PAAH Flight 7947, Captain C. A. Wilson. Position 28-25N 114-30W, altitude 20,000'. Bright white light moving constantly at high speed. Appeared to be one bright center light with four smaller lights on left side. Object moved 150 degrees to flight path and made 90 degree turn. Appeared southeast and disappeared south. Aircraft cruising at 10,000' and 11,000' were slightly higher. Object observed by two other crew members. Pilot emphatically object could not have been a meteor as there was no evidence of a tail or trail. Duration of sighting 10 seconds.

*See memo to  
Henderson*



FC

11 July 1959, 1302Z - RAMS Flight 2942, Captain V. G. Antnig.  
Position 25-00N 145-30W. Observed light in clear sky, night with bright moonlight. The light was twice the brightness of Venus. Object looked like a bright star and appeared in the west and disappeared in the west above aircraft. Possible shooting star. No estimate possible of specific distance or altitude. Duration of sighting 10-15 seconds.

2605 - 14330W  
11 July 1959, 1302Z - Allick Airways Flight 719/11, Captain L. S. Sawicki.  
Position 25-00N 145-30W. Observed light on a clear night, no moon, which appeared the brightness of automobile headlights one mile away. The color of the object was pure white and it changed brightness. Object appeared to be one large light with four smaller lights in trail. The object appeared to come straight at the aircraft and looked like a large tracer or very pistol flare, which burned out gradually. Appeared south-west and disappeared southwest. The flight path was level and the speed very high - 1000 knots or more. Duration of sighting 3-5 seconds. Could have been a meteor.

11 July 1959, 1302Z - Empress Flight 183-11, Captain L. G. Moffett.  
Position 29-40N 150-40W, altitude 11,000'. Observed object which appeared to be one large light surrounded by a cluster of six or seven smaller lights. Largest light the size of a dime. The lights were as bright as an automobile headlight one block away and the color was orange-yellow. The lights moved from southwest to southeast, moving faster than any known object. Duration of sighting five seconds. Clear sky with trace of daylight. Definitely not a meteor or shooting star, no trail visible.

11 July 1959, 1302Z - United 21. Position 920 N of east of Honolulu, altitude 12,000'. White light down ahead and above, descended toward aircraft and below, then banked to the left. As the object moved away there were four white lights in a rectangle with a large bright light in the center. This object was also observed by crew members of the following: CP 123, RAMS 945, Allick 601, RAMS 752. Description and other pertinent data approximately the same as reported.

### B. Actions.

1. The AIMS determined by contact with the Commander, Western Sea Frontier, AIMS, Aq., 20th Air Division, the AFCEM Navy Liaison Officer, and the Missile Division, AFCEM-413 of AFCEM that no missiles or satellites known to the United States could have been the cause of these sightings.

2. Detachment #1 of the 1306th AIMS investigated the United Airlines sighting of 10 June 1959.

3. Contacted the 1116th Balloon Activities Group, Lowry AFB. There was a balloon, AFCEM 5-467, launched from Vernalis, in the area at 1300Z on 11 July 1959. Position 15 degrees to 18 degreesN 150 degrees to 153 degreesW. These balloons carry red lights which are visible for five miles. However, due to the intense brightness, color difference and apparently great speed the possibility of this object being a balloon is ruled out.



~~CONFIDENTIAL~~

PART II. DISCUSSION

A. Captain M. G. Mathwig of TWA Flight 80912 reported bright moonlight. The moon set at 2238 local time or 0838H, four hours and twenty-four minutes prior to the sighting. It is possible that the object shed so much light that the captain was of the impression that the moon was still up. Captain Mathwig also reported that the object was approximately twice as bright as Venus, which at its brightest has a stellar magnitude of  $-4.4$ , and is bright enough to cause shadows at night. The object, if approximately twice as bright, would have had a stellar magnitude of approximately  $-5$ .

Captain Moffatt of Express Flight 323-11 reported a trace of daylight. Morning twilight began at 0331 local or 1331Z, twenty-nine minutes after the sighting. Here again, it is believed that the extreme brightness of the object was responsible for the misimpression that the light was from other sources.

B. Captain H. C. Scherling of United Airlines Flight 526, 18 June 1959 sighting reported the object as a rocket or missile. The AFIC ruled out the missile and suggested a meteor for the following reasons:

1. No known rockets or missiles in the area.
2. The object traversed approximately 15 degrees in two seconds at the pilot's estimate of 30 miles. The trajectory at this time was reported as flat. Using this data, a missile would have a speed of approximately 14,500 MPH. This would indicate a ballistic missile. However, the relatively low altitude and flat trajectory with the power plant still operating rules this out as a possibility.
3. Assuming all estimates to be correct, except the 30 miles and extending this to 100 miles, the speed necessary to traverse 15 degrees in two seconds is approximately 50,000 MPH, or in the meteor range.
4. The description of the object closely matches that of meteors of the "fireball" class.
5. The surface vessels probably could not see the object due to the relatively short distance to their horizon. From 17,000 feet the crew of the aircraft would have an absolute horizon of approximately 137 miles.

C. Fireballs

Any meteor which is as bright as or brighter than  $-3$  magnitude is defined as a "fireball". The color range varies from a bluish-white through white to yellow, green and reddish. The usual event when fireballs are seen is a brilliant flash of light which lasts as long as the meteor is visible, but may fluctuate in brightness. Sometimes



[REDACTED]

these meteors break into several parts. Some of these meteors leave trails and some do not.

*enc.*

From a report titled "Long Enduring Meteor Trails and Fireball Orbits" by [REDACTED] University of Pennsylvania, of 33,000 meteors observed by Professor Cuno Hoffmeister of Sonneberg Observatory, Germany, only 42, or one of every 786, left trails which persisted for seconds or more. The American Meteor Society indicated a ratio of one in 750; also, of 102 fireballs listed in the report, only 20 had trails which were significant enough to record. According to Dr. Oliver's report, fireballs occur approximately one in every 250 meteors. Fireballs are sporadic and not associated with any particular shower.

The average speed of the 102 fireballs from Dr. [REDACTED]'s report is 28 miles per second, approximately 100,800 miles per hour, or 87,480 knots. Curved or irregular paths may be due to irregular shapes. Fireballs sometimes explode and on occasion they may be heard.

#### D. Conclusion

It is the AFIC opinion that the objects responsible for all of these sightings were that type of exceptionally bright and large meteors classed as "fireballs".

Further, it is believed that all of the reports on 11 July 1959, refer to the same meteor. The time, description, and general direction of the object from the witnesses tends to substantiate this opinion. See attachments one and two.

[REDACTED]

4.



11 July 1954

FLIGHT NO./OR. NUMBER	DATE	TIME	DIRECTION OF OBSERVATION	DESCRIPTION	CHARACTER OF LIGHT AND SPEED	LOCATION OF OBSERVATION	REMARKS
1484 1947 Capt. W. A. Wilson	20-23-11	23,000'	120-112	Very bright white light like four smaller lights in a line.	Generally east. Very high rate of speed.	10-15 miles.	Observed by other observers.
1484 1948 Capt. E. C. Anthony	20-23-11	14,000'	120-112	Looked like a bright star. Faded bright- ness of known.	Generally east. Very high rate of speed.	10-15 miles.	
Office Airways 1719/11 Capt. L. G. Anthony	20-23-11	14,000'	120-112	One large light with four smaller lights in close trail. Light intensity brightness of automobile headlights at one mile.	Generally east. Very high rate of speed.	10-15 miles.	
Express Flight 1719/11 Capt. L. G. Anthony	20-23-11	14,000'	120-112	One large orange yellow light surrounded by a cluster of 6 or 7 smaller lights - also in a line.	Generally east. Very high rate of speed.	10-15 miles.	
United 21	20-23-11	12,000'	120-112	Like bright light. One large central light surrounded by four lesser lights.	Generally east. Very high rate of speed.	10-15 miles.	

11/2 1954